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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,966	01/30/2004	Colm V. Cryan	OIC-PT005.1	4543
3624	7590	07/28/2005		
VOLPE AND KOENIG, P.C. UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			EXAMINER WONG, TINA MEI SENG	
			ART UNIT 2874	PAPER NUMBER

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/768,966	Applicant(s) CRYAN ET AL.	
	Examiner Tina M. Wong	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

### DETAILED ACTION

This Office action is responsive to applicant's communication submitted on 08 July 2005.

#### *Specification*

The disclosure is objected to because of the following informalities: On Page 6, Line 4 of the Specification, the sentence ending with the phrase "the mode of the" appears to be an incomplete sentence. Appropriate correction is required.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,360,372 to Maciejko. Maciejko discloses a drawn and fused preform comprised of all unclad fibers having different indices. Since the fibers disclosed by Maciejko are unclad, the core of the fiber would have one refractive index and it is the unclad fiber core that is used to draw the preform. (Column 2 Lines 53-60) Maciejko further discloses that the fibers are made of glass. Additionally, in Figure 1, it is shown that the rods being fused together and in direct contact with each other. But Maciejko fails to disclose the entire fiber to be a graded index fiber, a predetermined arrangement of the low and high index rods and an arrangement of index rods to provide a desired refractive index distribution. Since Maciejko discloses arranging the fibers in a bundle, it would have been obvious at the time the invention was made a person having ordinary skill in the art to have arranged the fiber into a graded index fiber as required by the application

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the fiber bundle would be used for. (Column 1 Lines 63-70) Further, it is well known in the art that a graded index fiber will have multiple indices of refractions, since the definition of a graded index fiber is a fiber having many indices (i.e. a gradation from fiber center to periphery) and because Maciejko discloses a drawn preform to have different indices, it would have been obvious at the time the invention was made to a person with ordinary skill in the art to have placed additional rods in a predetermined arrangement with different indices in the preform to obtain the desired refractive index of an optical fiber.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,360,372 to Maciejko as applied to claim 1 above, and further in view of U.S. Patent 6,091,872 to Katoot. Maciejko discloses a drawn, heated and fused preform with unclad fibers with a plurality of different indices. But Maciejko fails to disclose the low and high index rods to be formed of a polymer. However, Katoot discloses an optical bundle drawn and fused (Column 9 Lines 13-15). Katoot further discloses the optical fibers to be made of glass or polymers. (Column 10 Lines 5-6) Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have formed low and high index rods with a polymer material in place of glass.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,360,372 to Maciejko as applied to claim 1 above. Maciejko discloses a drawn, heated and fused preform with unclad fibers with a plurality of different indices. But Maciejko fails to disclose a graded index fiber with a center located at a specified position, the fused fibers located in a predetermined pitch and an arrangement of fused fibers into an array. However, Maciejko does disclose array of in Figures 1 and 2 that show the fused fibers are also capable of being

placed in an array. Therefore, it would have been obvious at the time the invention to a person with ordinary skill in the art to have a graded index fiber placed in a specific location and to have the fused fibers arranged in an array located in a predetermined pitch.

***Response to Arguments***

Applicant's arguments, filed 08 July 2005, with respect to the rejection(s) of claim(s) 1-12 have been have been carefully studied and re-evaluated by the examiner. The arguments advanced therein, are persuasive and the rejections based upon prior art made of record in the previous Office Action are withdrawn. During a careful review of the prior art of record in this application, however, it has been discovered that a prior art cited in the previous Office Action is much more relevant than previously realized. Accordingly, a new rejection is set forth below. This action is **not** made final.

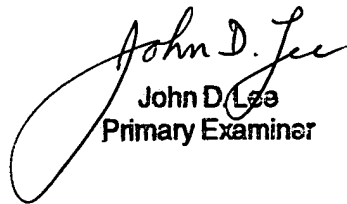
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M. Wong whose telephone number is (571) 272-2352. The examiner can normally be reached on Monday-Friday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TMW



John D. Lee  
Primary Examiner